REPORT OF MINERAL EXAMINATION

Claimant:	Berry E. Leftwich, et al. 1430 South 46th Street Tacoma, Washington
Reason for Examination:	The association placer owned by Berry E. Leftwich, et al., is within the Crystal Mountain Recreation Area, and its location conflicts with certain recreation facilities and improvements being built under special use from the Forest Service.
Subject:	Validity of a 160-acre association placer mining claim.
Lands Involved:	The "Tacoma Placer Mining Company" placer claim located along Silver Creek, commencing at a point 4,500 feet north from the junction of Silver Creek and Elizabeth Creek and running 12,000 feet northward along Silver Creek, and embracing 300 feet on each side of the creek throughout its entire length. The placer claim is situated in T. 17 N., R. 10 E., sections 12, 13, and 24; and T. 17 N., R. 11 E., section 19, W.M. (unsurveyed), Snoqualmie National Forest, Pierce County, Washington.
Land Status:	The subject mining claim lies within the Crystal Mountain Recreation Area withdrawal W-03920. The application for withdrawal was serialized March 1, 1960, and withdrawn by Public Land Order 2321 dated April 4, 1961. (See Exhibit 2.)
Location Data:	See pages 2 and 3.
Mining District:	Summit, organized 1891.
Mining Engineers and Dates of Examination:	Milvoy M. Suchy, June 5, 1964 Charles R. Garrett, Jr., April 16, May 19, 1965; June 2, 5, 7-12, 16, 17, 19, 20, 22-26, 1964; September 9, 10, 1964
Accompanied by:	June 5, 1964, Milvoy M. Suchy, Mining Engineer June 17, 1964, Berry E. Leftwich, claimant
Interviews:	October 25, 1963 February 4, 1964 (with Milvoy M. Suchy) October 27, 1964 (with Milvoy M. Suchy) February 5, 1965 (left relinquishment form)

Location Data

Beginning at a point in center of Silver Creek which point is 4500 ft. down said Silver Creek in a northerly direction from fork of Elizabeth Creek and said Silver Creek and said point beginning being on and along the north side and north boundary line of Silver Falls Claim, located by Jennie E. Fife. Notice of said Silver Falls Claim are recorded in Volume 13 of Mining Deed Page 2 in County Auditors Office of Pierce County in State of Washington September 14, 1927. Thence running from said point of beginning in a northerly direction down center of said Silver Creek Bottom 12000 ft. to north line and end of this claim and 300 ft. on each side of said Silver Creek from center of said Silver Creek between the south end and boundary of this claim and the north end and boundary of this claim the south east corner of this is 300 ft. east of said point of beginning and the southwest corner of this claim is 300 ft. west of point of beginning and north east of this claim is 300 ft. east of the center of said Silver Creek where it is intersected by the north end and boundary line of this claim and the north west corner of this claim is 300 ft. west of the center of said Silver Creek where it is intersected by the north end and boundary line of this claim lying and being in Summit Mining District in Pierce County of State of Washington. Said claim is designated and known as Tacoma Placer Mining Company.

November 2, 1929
Restaked July 1, 1947

Recorded in Pierce County, Washington

Data	Year				
	1929	1947	1947	1950	1955
Date of Location	11/2/29	7/1/47	7/1/47	7/1/50	7/1/55
Date Recorded	11/18/29	7/1/47	11/18/60	8/8/50	7/25/55
Book	13 MR	14 MR	14 MR	14 MR	14 MR
Page	13	403	853	483	577
Locators	Axel Swanson	Berry E. Leftwich	Berry E. Leftwich	Wm. McIntosh	B. E. Leftwich
	C. J. Leftwich	Victor Gooschin	Birdie Leftwich	Jack Seymour	Mrs. B.E. Leftwich
	J. W. Leftwich	Jack Seymour	Bert L. Thorpe	Phil Seymour	Bert L. Thorpe
	O. D. Johnson	Bert Thorpe	Marjorie Thorpe	Vick Goshen	Mrs. Bert L. Thorpe
	W. E. Cook	Millard Leftwich	Richard B. Wasson	Bert Thorpe	Henry R. Jones
	R. B. Teeter	Phil Seymour	Henry R. Jones	Henry Jones	Robt. E. Williams
	Grant A. Dentler	Lew Whittaker	Robt. E. Williams	Jim Newark	Jack Seymour
	M. J. McNerthney	Wm. L. McIntosh	Jack Seymour	Berry Leftwich	Victor F. Gooschin

It will be noted in the middle column of the preceding table that the location notice--though dated July 1, 1947, and recorded November 18, 1960--has a different set of claimants. This list of claimants is probably the current one as they appear to give Berry E. Leftwich power of attorney to sign any and all papers or documents concerning the subject placer mining claim. This power is noted on Exhibit B on Right-of-Way Deed to U. S. Forest Service dated September 19, 1963, and recorded in Docket 1320, pages 363-365, Deed Records, Pierce County, Washington.

The following is the address of each:

Berry E. and Birdie Leftwich
1430 S. 46th Street
Tacoma, Washington

Bert L. and Marjorie Thorpe
5427 South L Street
Tacoma, Washington

Henry R. Jones
3715 East L Street
Tacoma, Washington

Robert E. Williams
6819 Pacific Avenue
Tacoma, Washington

Jack S. Seymour
1730 49th Street N. E.
Tacoma, Washington

Victor F. Gooschin
6030 S. Montgomery Street
Tacoma, Washington

ABSTRACT

The subject 160-acre association placer mining claim was located in 1929 by eight locators, two of whom were relatives of the present principal claimant, Mr. Berry E. Leftwich. Through several changes, chiefly to name new claimants, the present claimants came into ownership. Mr. Berry E. Leftwich has been delegated the authority to act for the other claimants in matters pertaining to the claim.

The claim has never been mined or explored in a systematic or business-like manner, nor has any significant amount of placer gold ever been produced from the claim.

The claim is situated in the newly withdrawn Crystal Mountain Recreation Area, which is about 75 miles southeast of Seattle, Washington. This area is being extensively developed for both winter and summer sports and recreation resort activities. By the year 1970, it is estimated that approximately $10,000,000 will have been invested therein.

The geologic formations exposed within the boundaries of the recreation area are chiefly early Tertiary volcanic debris intruded by later granitic rocks in the form of small stocks, dikes, and sills. No significant deposits of valuable minerals have been discovered in this geologic environment or geographic area, although very small isolated mineral deposits containing gold, silver, copper, lead, and zinc have been disclosed on two lode claims, neither of which is owned by the subject parties. On the subject placer claim only alluvial deposits, derived from the country rocks, supra, occur in varying depths, often containing insignificant accumulations or deposits of fine gold, the valuable metal for which the subject claim was located.

Location and Topography

The subject placer claim is situated in the Crystal Mountain Recreation Area, White River Ranger District, Snoqualmie National Forest, and adjoins the east boundary of Mount Rainier National Park, about 75 miles southeast of Seattle, Washington. The mining claim lies astride Silver Creek, the main drainage feature of the recreation area, and is accessible from Enumclaw, Washington, the closest incorporated town, by following U. S. Highway 410 about 34 miles to the junction of Crystal Mountain Road, thence traveling about 6 miles further on a B.P.R. improved road to the claim and Crystal Mountain, Inc., condominium. (See Exhibits 1 and 2.)

The terrain is typical alpine to subalpine with moderate to precipitous slopes leading to sharp, bare crags and serrated ridgetops. The entire area has been glaciated, which is exemplified by U-shaped valleys, cirques, and the moraine deposits. The numerous streams in the area are usually of high gradient and flow over old morainal deposits and lateral landslides which plugged the main stream in several places. In the valleys bedrock shows only where there are waterfalls or where the gradient becomes too steep for morainal deposits to accumulate. The altitude in the vicinity of the mining claim is about 3,800 to 4,200 feet above sea level.

Surface Values

The surface values of the recreation area and component subject mining claims are composed chiefly of recreation, watershed, and timber.

The sandy loam soil which covers a major portion of the mining claim area supports a fair stand of timber, chiefly fir, a portion of which has already been harvested.

There is fairly sound Douglas-fir present up to an elevation of 3,500 feet, and small scatterings of commercial stands of hemlock and true firs continue to an elevation of 5,000 feet. This timber is very defective, being over-mature. Also scattered in this latter zone are subalpine species. Wherever timber occurs above 5,000 feet among the rock ridges and bare slopes, the predominant timber type of the upper slopes is subalpine, of small stature, with the lower valley in small sapling to pole-size stands of Douglas-fir.

The subject land is in a prime recreation area and is under development for such use. During the past 3 years over $5,000,000 has

been committed to provide the best in winter sports. About $1,000,000 was spent for the construction of an all-weather, asphalt-topped access road which connects with U. S. Highway 410 just outside the north boundary of Mount Rainier National Park; approximately $500,000 was spent to extend a three-phase powerline 37 miles to the resort; another $100,000 was spent in making telephone connections to the outside world by means of a buried cable; the condominium, hotel, motel, restaurant, etc., cost about $2,000,000; ski lifts, day lodge, etc., cost another $1,500,000. Expenditures to further develop the recreation facilities during 1965 are to be about $1,000,000; and during the next few years, or by 1970, an additional $4,000,000 will be invested in the area.

Areal Geology

The general geology of the area and surrounding country is dominated by the Mount Rainier caldera and characterized by the alpine to subalpine exposures of Eocene (Chanapecosh formation) volcanic debris deposited on existing land surfaces and in the surrounding inland seas. The Chanapecosh formation is composed chiefly of basaltic andesite flows, breccias, and tuffs with intercalated strata or lenses of sandstones and shales which are often carbonaceous. These rock formations, the oldest exposed in the area, have been somewhat warped, faulted, and intruded by plutonic and hypabyssal igneous rocks, chiefly granite, granodiorite, and monzonite in the forms of stocks, plugs, dikes, and sills.

The granitic rocks, supra, are exposed in the Bumping Lake and Morse Creek localities, and the meager metalliferous mineral deposits associated with these and adjoining rocks are thought to be genetically related to later intrusions of aplite and quartz porphyries.

Within the Crystal Mountain Recreation Area there are exposed Eocene-Oligocene volcanic rocks (Chanapecosh formation, supra) composed chiefly of andesite and basalt flows, andesitic tuffs and breccias, and old mudflows and landslides. These formations have been intruded by Tertiary granitic and porphyritic rocks, chiefly granodiorite, monzonite, and andesite porphyry, in the form of dikes and small stocks. The granitic dikes, in several places, show strong silicification and display sparsely disseminated fine crystals of pyrite.

These rocks, after considerable erosion and disintegration, were covered with air-borne volcanic debris; i.e., pumiceous ash, from late eruptions of Mount Rainier, the latest of which occurred about the year 1400 B.C. The depth of the ash was not great, but

it must have accumulated to several feet at times. Today it is observed only in the cirques and stream valleys, where it forms a soil-mantle several feet deep in places.

Economic Geology

The meager metalliferous minerals deposits of the Crystal Mountain Recreation Area are probably genetically related to the granitic and/or porphyry rocks, supra, or other intrusive rocks, not exposed, all of which are deficient or impoverished of metalliferous minerals.

There were no mineralized zones observed on, and in the immediate vicinity of, the subject mining claims; however, the few mineralized zones observed in the Crystal Mountain basin appear to have been directly associated with the nearby silicified, pyritized granitic dikes and rather wide zones of hydrothermal alteration which were more or less structurally controlled. The country rock in such cases has been bleached, altered, silicified, and often pyritized for widths up to 20 feet.

Base metal mineralization occurs intermittently along fractures in thin seams, lenses, or small pods. Assays of samples taken from old prospect pits and mine workings show detectable amounts of copper, lead, zinc, gold, and silver. Several thin stringers have assays showing a gross value of $44 per ton across 1½ inches of vein-filling to $26 gross value across 16 inches of vein-structure; these samples were taken from the Last Flower lode claim, owned by the Silver Creek Gold and Lead Company, which is the subject of a separate report.

Other high assays were reported for samples 6 to 10 inches wide of white gouge in the Garnero mine. These samples showed gold and silver values ranging from $25 to $63 per ton. These samples were collected by Forest Service mining engineers, and the latter samples will be checked for continuity of high values. The gangue minerals are generally clay, quartz, calcite, pyrite, and arsenopyrite.

The meager deposits of placer gold which occur in the Crystal Mountain Recreation Area and on the subject placer claim are no doubt derived from erosion and breakdown of such auriferous zones, supra, which were subsequently concentrated sporadically by natural processes in and along Silver Creek and its headwater tributaries. The gold is reported to range from very fine colors to coarse, spongy nuggets found on the Ogren placer claim situated on Bear Creek (see Exhibit 3). This placer gold, according to reports, occurs all the way from grass roots and surface-stream bars down to bedrock.

Mr. Leftwich reported that the placer gold found along Silver Creek on the Tacoma placer claim was fine in size and occurred in pockets. He had no records to show the amount of gold taken or mined from the claim but stated that a couple of earlier miners had installed a sluice in the vicinity of "T-13" and "T-14" (see Exhibit 3) and, during the course of their operations, had extracted about $600 worth of gold dust. Mr. Leftwich had done only sporadic panning along the creek and had not found any significant concentrations of gold. He believes the most favorable places for finding placer gold are around large boulders in the creek and behind old tree stumps along the creek sides and bottom.

History and Production

The Summit mining district in which the subject claim and Crystal Mountain Recreation Area are located was organized around 1891. At the present time it is not active as a mining district and has no producers. The first mining in this district of which there is any record* was done on some placer ground near the head of Morse Creek. This work represents the first such work in the area during the late 1800's and resulted in later prospecting in the Silver Creek area. Up until World War I, considerable interest was shown in the area, not only from a placering standpoint but from underground workings that were driven in this era. Numerous mining companies were organized and a considerable amount of stock was sold on the basis of the prospects in the Summit mining district. The district was always hampered by the lack of good access. It was not until after World War I that the area became reasonably accessible by a one-lane, unsurfaced road. During the 1930's interest in the area was revived, some placer mining was done, and a mine-to-market road was constructed up Silver Creek to the mine working. Also at this time underground workings were rehabilitated and extended in some instances. Interest continued until the start of World War II. The Silver Creek Gold and Lead Company, under the direction of Mr. Vallis, during the period of 1942 to 1945 drove approximately 100 feet of crosscut and an additional 100 feet of drift in exploring their group of claims. This property is covered by a separate Forest Service mineral report. Twenty tons of ore were shipped by this company to the Tacoma smelter during 1945 that netted $89.75 per ton in gold, silver, copper, and lead.

---

* "Mining in the Pacific Northwest," 1897, by L. K. Hodges (unpublished)

The chief metalliferous mineral production apperently consists mainly of meager placer values in gold recovered during the early mining days and in the 1930's, when the price of gold was advanced by the U. S. Government from $20.67 to $35.00 per troy ounce, and the 20 tons of ore shipped by the Silver Creek Gold and Lead Company in 1945.

There is no published record at hand of gold produced from the subject placer claim, nor does Mr. Leftwich, as he stated, have any personal knowledge of what value could be expected per cubic yard of gravel processed from this claim. He also stated that the gold occurred as or in pockets throughout the gravel deposit and that no one had worked the gravels any deeper than 3 feet below the creek channel.

Washington Bureau of Mines Bulletin No. 37, on page 189, describes the "Silver Creek Placer" situated in T. 17 N., R. 10 E., section 25, N½, and states: "Recoveries over a 10-year period averaged $1.25 per cubic yard." This claim has not been identified to existing placer claims on Silver Creek, nor have Forest Service mineral examiners, thus far, confirmed the data submitted therewith. This claim, "Silver Creek Placer," is apparently some distance upstream from the subject placer claim.

Pertinent Information

Evidence of the existence of the subject placer claim has been known since early in the research stage of the Crystal Mountain Recreation Area. The Forest Service acquired a right-of-way across the subject claim on September 19, 1963, for the purpose of constructing the new S.P.R. access road to the business section of the recreation area. (See file designation 5460 - "Rights-of-Way Acquired - Tacoma Placer Mining Co.", Forest Service files, Snoqualmie National Forest, Seattle, Washington.) Berry E. Leftwich, principal claimant, signed the right-of-way deed under authority delegated by the other claimants listed earlier in this report.

Mr. Leftwich, supra, suffered a severe heart attack in 1960 which has left him incapable of performing any strenuous work. He stated that his uncle, Charlie Leftwich, was instrumental in locating the original claim in 1929 and promoted the early work to develop it. After the uncle died, interest in the claim lagged and no concerted efforts were made by the other claimants to further explore or develop it.

Early in the 1930's a portion of the claim was jumped by two people; but Mr. Leftwich and the other claimants, through an able attorney,

managed to obtain an abandonment from the jumpers. Mr. Leftwich said he believed that these jumpers were recovering gold values as they fought dispossession very strongly. However, Mr. Leftwich stated he had no personal knowledge of the values recovered nor what values could be expected from these gravels. Mr. Leftwich has never produced any placer gold from the subject claim, nor can he substantiate the fact that any other person has done so.

The sampling work conducted by the Forest Service during June 1964 covered the full length of the subject placer claim, which measures 12,000 linear feet along Silver Creek. This claim, the Tacoma placer, commences at a point 4,500 feet downstream from the confluence of Silver Creek and Elizabeth Creek, at the day lodge. The south end line adjoins the north end line of the "Silver Creek Placer Claim" owned by R. D. Fife, Jr. At a point about 7,000 feet downstream from the south end line, the Tacoma placer emerges from the present Crystal Mountain Recreation Area withdrawal, thus leaving 5,000 feet of length of the claim located upon unappropriated public land. (This is noted on Exhibits 2 and 3.) A review of this situation has disclosed that the land for at least a mile north of the present withdrawal boundary is very suitable and desirable for recreation purposes. Consequently, an application is being made to withdraw this additionalland and extend the Crystal Mountain Recreation Area boundary at least a mile farther north.

The mineral examination of the Tacoma placer had been discussed with Mr. and Mrs. Leftwich during interviews on October 25, 1963; February 4, 1964; and October 27, 1964. During the last interview Mr. Leftwich indicated he would consider relinquishing the claim rather than go through a Government hearing. On February 5, 1965, a relinquishment was left with Mrs. Leftwich (Mr. Leftwich was not at home) for the claimants to consider. No action has been pressed to obtain this relinquishment because of the pending serialization in the Land Office of the application to withdraw the additional ground mentioned above. This procedure is designed to protect the claimants from jumpers in the event that they relinquish but the application to withdraw additional ground is denied by the Land Office.

Discovery

On June 17, 1964, Mr. Leftwich accompanied the undersigned mining engineer on the field examination of the claim. Mr. Leftwich pointed out, from the highway, the places he thought most likely to yield placer gold along Silver Creek within the limits of the subject claim and also where the two jumpers had installed their sluice box to recover the placer gold from their operation. Mr. Leftwich took no other part in the Forest Service sampling program.

During June 1964 the U. S. Forest Service tested the placer gold values on the subject claim by means of taking samples from test pits excavated by a backhoe mechanical excavator and trenches dug by hand. Numerous pan samples were obtained from hand-excavated pits dug in the gravel bars and each bank along the water edge of Silver Creek. The results of the sampling showed values in gold and silver ranging from nil up to one-third cent per cubic yard. These results are tabulated on Exhibit 3. The sample locations are shown on the map (Exhibit 3) by encircled numbers and are the sample numbers shown in the tabulation. Exhibit 4 is a multiple exhibit displaying a picture of each pit and certain component data.

The actual end-line corners and meandering side-line corners were not found on the ground. Mr. Leftwich pointed out an old stump near the center of the south side line, which marked its common side to the "Silver Creek Placer" claim owned by R. D. Fife, Jr. Thus, with the description of this association placer claim of 160 acres, more or less, and the Puget Power & Light Company power pole traverse, the north end line was fairly accurately established.

Each pit, trench, and spot sample was tied to a power pole, each of which is fairly accurately plotted on Exhibit 3. Exhibit 3, a base map, was prepared by Forest Service engineers from the advance U.S.G.S. Mt. Aix Quadrangle map, with certain additions and modifications made and plotted thereon by Forest Service mining engineers. The scale is 1"=1,000' and shows the location of each test pit designated by the circled reference number.

The placer testing conducted by the Forest Service disclosed conclusively that no significant pay streaks or isolated deposits of placer gold occur on the subject placer claim. The backhoe which was used to excavate the pits had a bucket 26 inches across the digging edge and was capable of removing boulders up to 12 inches or somewhat larger from the bottom of the pits, where encountered. In so removing boulders of this size, it is the opinion of the undersigned mining engineer that the zone of gold concentration was reached and penetrated in each pit, where the total depth of the pit did not exceed 12 feet (this machine was capable of digging to a depth of 13 feet in loose or unconsolidated material). Many of the pits excavated on the subject claim bottomed in clay and/or sandy silt. After each pit was excavated to its full depth, a vertical channel sample was cut with the bucket measuring 24 inches wide, 12 inches deep by the total depth of the pit; and generally all of this sample was sluiced. In case of a trench, such as T-2,

the full volume of the trench was sluiced. For each spot sample taken from the stream bars or small pits along the stream edge, two to three pans of material were panned separately in order to get a fairly large sample from the lower portion of such pits. Some of these pits and trenches were excavated among the stream-bed boulders.

The above procedures are the same as used to sample the R. D. Fife, et al., placer claims, Job No. 63.

The heavy sands or concentrates obtained from each sample by panning were bottled, sealed, and shipped to Black & Deason, Assayers, Salt Lake City, Utah, for an assay of total gold in each sample.

Each pit from which a sample was taken was excavated as deep as the backhoe could dig. Where the pit bottomed among the stream-bed boulders, it was found that the boulders were so tightly wedged together that it is doubtful they could have been removed manually with the aid of a crowbar or other such lifting device, thus, also indicating the depth to which hand-mining methods would be practical.

Conclusions

After due consideration of the data and information gained by a diligent investigation and field examination, it is the opinion of the undersigned mining engineer that:

(1) The subject placer mining claim constitutes a potential administrative problem to expansion of the Crystal Mountain Recreation Area activities.

(2) The meager, sporadic showings of placer gold have no present or prospective economic value.

(3) The claim lacks a valid discovery.

(4) The land is nonmineral in character.

Recommendations

It is recommended that adverse proceedings be directed against the subject placer mining claim, based on the charges:

(1) That a valuable mineral deposit is not present on the subject placer claim.

(2) That the land encompassed by said claim is nonmineral in character.

Date MAR 2 9 1965

CHARLES R. GARRETT, JR.

CHARLES R. GARRETT, JR., Mining Engineer

APPROVED:

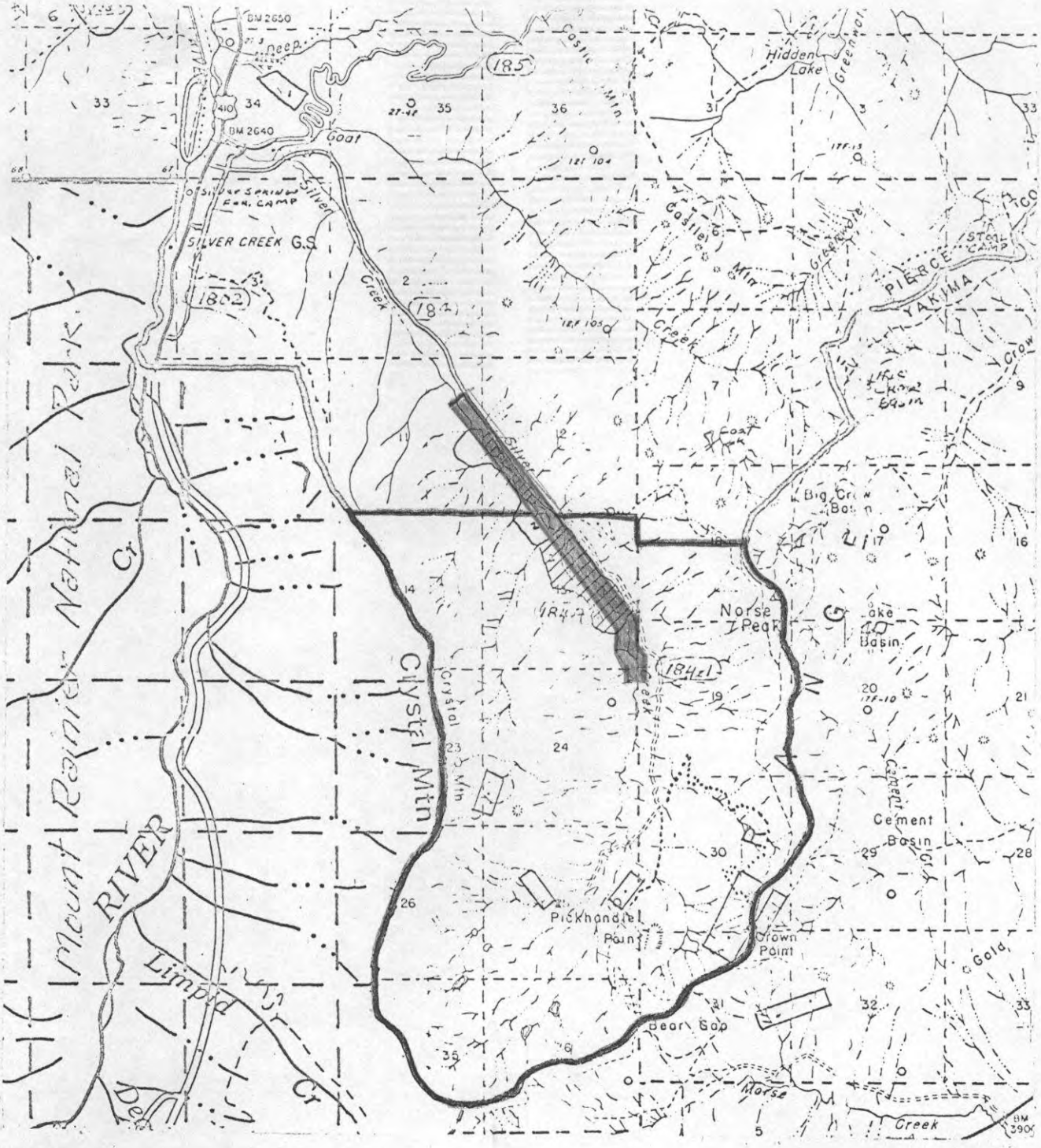
Date APR 1 5 1965

Jack I. Groom

Acting Assistant Regional Forester

BRITISH COLUMBIA
VANCOUVER ISLAND
Glacier
Bellingham
Concrete
Mt Vernon
Twisp
Okanogan
Port Angeles
Everett
Chelan
Waterville
Seattle
Skykomish
Spokane
Quinault
Wenatchee
WASHINGTON
Shelton
Tacoma
Olympia
Ellensburg
Raymond
Chehalis
Marys Corner
Yakima
Pasco
Astoria
Kelso
Umatilla
Goldendale
Carson
Arlington
Vancouver
Hood River
The Dalles
Pendleton
Portland
Elgin
Wallowa
Enterprise
Tillamook
La Grande
Salem
Baker
Newport
Corvallis
Albany
Madras
Waldport
John Day
Sisters
Prineville
Junction City
Eugene
Bend
Florence
OREGON
Reedsport
Lapine
Burns
Ontario
Vale
Coos Bay
Roseburg
Prospect
Grants Pass
Gold Beach
Medford
Bly
Valley Falls
Cave Junction
Klamath Falls
Lakeview
CALIFORNIA
NEVADA
IDAHO
PACIFIC OCEAN
U.S F.S. R-6 1962
0 20 40 60 80 100 Miles
Scale in Miles
U.S DEPARTMENT OF AGRICULTURE
FOREST SERVICE
NATIONAL FORESTS
OF THE
PACIFIC NORTHWEST REGION
Subject Area
LEGEND
STATE LINES
COUNTY LINES
NATIONAL FORESTS

EXHIBIT 1



LEGEND:

Boundary of Crystal Mt. Rec. Area Withdrawal ▭ present

Subject Land ▬

3-2-65
CRG

EXHIBIT 2

Pit T-1. Photo 6, Roll 1 - view looking west--a trench 3/4' x 1' deep x 18' long.
Sample T-1 - 3/4' x 1' deep x 18' long
Sample T-1A - 3/4' x $\frac{1}{2}$' x 12' long
S. 85° E. 336' from Pole 91

Pit T-2. Photo 10, Roll 1 - view looking north--a pit 4' x 7' x 8' deep. Vert. chan. sample cut 2' wide x 1' deep x 8' high. N. 22° E. 195' from Pole 72.

EXHIBIT 4-1 & 2

Pit T-3. Photo 13, Roll 1 - view looking east. A pit 4' x 6' x 12' deep. Vert. chan. cut 2' x 1' x 12'. N. 29° E. 148' from Pole 70.

Pit T-4. Photo 17, Roll 1 - view looking northwest. A pit 4' x 6' x 13' - vert. chan. cut lower $4\frac{1}{2}$' of pit. Sample 2' x 1' x $4\frac{1}{2}$'.

EXHIBIT 4-3 & 4

Pit T-5. Photo 16, Roll 1 - view looking southwest. A pit 4' x 6' x 13' - vert. chan. cut from lower 6-3/4' of pit - sample 2' x 1' x 6-3/4'. S. 38° W. 310' from Pole 55; 60' west of creek.

Pit T-6. Photo 15, Roll 1 - view looking southwest. A pit 4' x 6' x 10' - vert. chan. cut from lower 6' of pit - sample 2' x 1½' x 6'. N. 12° E. 100' from Pole 59; 70' east of creek.

EXHIBIT 4-5 & 6

Pit T-7. Photo 11, Roll 2 - view looking southeast.
A pit 4' x 6' x 10' deep - vert. chan. cut from lower 6-3/4' of pit - sample 2' x 1' x 6-3/4'.
N. 83° E. 205' from Pole 65; 200' northeast of creek.

Pit T-8. Photo 4, Roll 2 - view looking southwest.
A pit 4' x 6' x 13' - vert. chan. cut from lower 6.6' of pit - sample 2' x 1' x 6.6'.
S. 20° E. 80' from Pole 66; 100' west of creek.

EXHIBIT 4-7 & 8

Pit T-9. Photo 15, Roll 2 - view looking N. 65° E. -
A pit 4' x 6' x 8' deep - vertical channel sample 2' x 1' x 8'. N. 66° E. 316' from Pole 74; 80' east of creek.

Pit T-10. Photo 16, Roll 2 - view looking N. 30° E.
A pit 6' x 6' x 6½' deep.
Sample T-10, upper 3½' cut as channel 1' x 2' x 3½'
Sample T-10A, lower 3' cut as channel 1' x 2' x 3'
Due east 333' from Pole 79; 25' west of creek.

EXHIBIT 4-9 & 10

Pit T-11. Photo 9, Roll 3 - view looking west. A pit 6' x 6' x 8½' N. 55° E. 297' from Pole 72. Vert. channel of lower 4½' of pit composed sample (1' x 2' x 4½'). East of creek.

Pit T-12A. Photo 11, Roll 14 - view looking southwest. A pit 3' deep for spot streambed sample; 3 pans yielded no colors and very little concentrate. No sample retained. 50' upstream from T-12.

EXHIBIT 4-11 & 12A

Pit T-12. Photo 12, Roll 14 - view looking north-east. A pit 2½' deep for spot streambed sample; 2 pans composed sample. N. 67° E. from Pole 80.

Pit T-13. Photo 13, Roll 14 - view looking south-west. A pit 1½' - 2' deep among streambed boulders. 3 pans composed sample. 300' upstream from T-12.

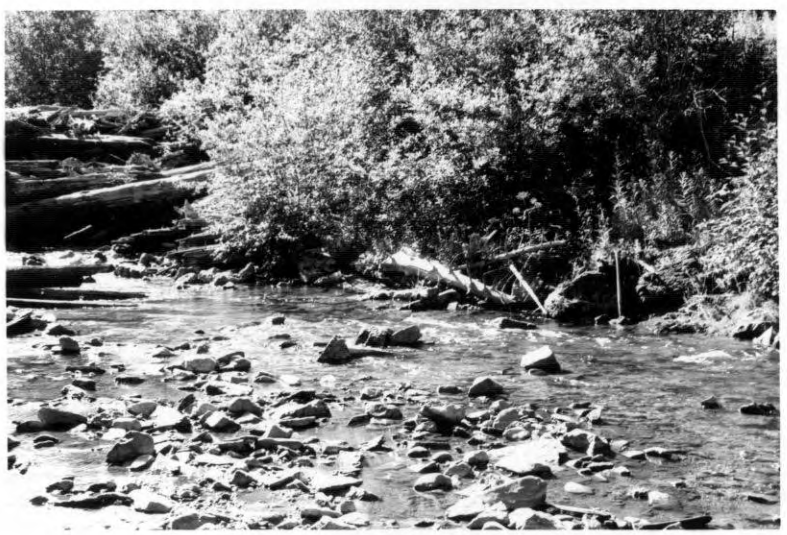
EXHIBIT 4-12 & 13

Pit T-14. Photo 14, Roll 14 - view looking northeast. A pit 2'+ deep among streambed boulders. 3 pans composed sample. 300' upstream from T-12.

Pit T-15. Photo 15, Roll 14 - view looking northwest. A pit 2½' deep at base of log. 3 pans composed sample. N.65° E. of Pole 88.

EXHIBIT 4-14 & 15

Pit 16. Photo 16, Roll 14 - view looking north. A pit 2'+ deep in gravel bar. 3 pans composed sample. 70' downstream from T-15.



Pit 17. Photo 17, Roll 14 - view looking southwest. A pit 2' ± deep along west bank. 3 pans composed sample. Due east of Pole 83.

EXHIBIT 4-16 & 17

Sample Number	Type of Material	Size of Sample Cu.Yd.	Total Gold in Mg.	Value Per Cu.Yd.
T-1	Clay, sand, gravel, bldrs.	0.500	None	0.00 ¢
T-1A	Clay, sand, gravel, bldrs.	0.167	None	0.00 ¢
T-2	Sand, gravel, clay, bldrs.	0.593	4.80	0.091 ¢
T-3	Sand, gravel, bldrs, with some clay	0.889	0.02	0.0028¢
T-4	Clay, sand, gravel, clay	0.333	0.03	0.015 ¢
T-5	Vol. ash, loam, clay, sand, gravel	0.500	0.05	0.0113¢
T-6	Loam, sand, gravel, bldrs., some clay	0.667	0.10	0.0168¢
T-7	Vol. ash, silt, sand, gravel, bldrs, some clay	0.500	0.07	0.0158¢
T-8	Vol. ash, silt, sand, gravel, bldrs., some clay	0.407	0.15	0.0415¢
T-9	Sand, gravel, clay, bldrs.	0.593	None	0.00 ¢
T-10	Vol. ash, sand, gravel, clay	0.259	None	0.00 ¢
T-10A*	Sand, gravel, bldrs., clay	0.111	None	0.00 ¢
T-11**	Vol. ash, organic mat., silt, sand, gravel, bldrs.	0.333	0.90	0.304 ¢
T-12	Sand, gravel among bldrs.	0.0124	None	0.00 ¢
T-13	Sand, gravel among bldrs.	0.0186	0.01	0.064 ¢
T-14	Sand, gravel, clay among bldrs.	0.0186	0.15	0.091 ¢
T-15	Sand, gravel, clay among bldrs.	0.0186	0.04	0.242 ¢
T-16	Sand, gravel among bldrs.	0.0186	0.02	0.021 ¢
T-17	Sand, gravel among bldrs.	0.0186	0.01	0.064 ¢
T-18	Sand, gravel among bldrs.	0.0310	0.12	0.044 ¢

* Top 3½' of Pit 10 ** Lower 3' of Pit 10

TACOMA PLACER

SEC. 18
SEC. 19

LEGEND

- Contours in 200' intervals
- Creek
- Lake
- Mountain Peak
- Trail
- Cascade Crest Trail
- Secondary Road
- Main Road
- National Park Boundary
- County Line
- Power Line
- Building
- Rope Tows
- T-Bar
- Chair Lift
- Gun Tower
- Projected Section Corners
- Monument

BOUNDARY OF RECREATION WITHDRAWAL
BLUE BELL GOLD MINING CO. EXTERIOR BDRY. - GARRARD JR.
BLUE BELL GOLD MINING CO. EXTERIOR BDRY. - GARRARD SR.
SILVER CREEK GOLD AND LEAD CO.
SILVER REEF - PATENTED MINING CLAIM
MS 1251 ST. LOUIS 1-5, ORE STRIKE, METAL LODE
GARNERO CLAIMS
MORTON VAN NUYS - ALLEGHANY CORP. CLAIMS
CALVIN BARKDULL & H.B. HIRD CLAIMS
R.D. FIFE, ET AL PLACER CLAIMS
TACOMA PLACER CLAIM
LUCKY SEVEN LODE MINING CLAIM
BLUE MOON LODE MINING CLAIM
BLUE JAY

CRYSTAL MOUNTAIN RECREATION AREA

Scale in feet

SNOQUALMIE NATIONAL FOREST

Base map traced from U.S.G.S. Quad. showing Chair Lift #1
Base line tie from Chair Lift #1 from staff compass survey by J. Schafer. Base line survey by Ken Oyler with ties to buildings and other improvements surveyed by Oyler, Jones and others. Road center line taken from plan & profile of the Bureau of Public Roads. Projected section corners taken from this plan. Power line and pole location taken from plan of same surveyed by Puget Sound Power & Light Company drafted by Simmons and Schafer Jan. 1965.

Exhibit 3